The Evening Sky Map

FREE* EACH MONTH FOR YOU TO EXPLORE, LEARN & ENJOY THE NIGHT SKY

WWW.SKYMAPS.COM

SOUTHERN HEMISPHERE
NOVEMBER 2014

Sky Calendar – November 2014

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1 **Mercury at greatest elongation**, 19° west of Sun (morning sky) at 13h UT. Mag. –0.5.

3 **Moon at perigee** (closest to Earth) at 0h UT (367,879 km; angular size 32.5').

4 **Mercury 4.2° NNE of Spica** (18° from Sun, morning sky) at 16h UT. Mags. –0.7 and +1.0.

4 **Moon near Uranus** (evening sky) at 18h UT. Mag. +5.7.

6 **Full Moon** at 22:22 UT.

8 **Moon near the Pleiades** (morning sky) at 1h UT.

8 **Moon near Aldebaran** (morning sky) at 21h UT.

12 **Taurid (north) meteor shower peaks.** Meteors often appear slow moving (28 km/sec) with the occasional very bright fireball.

12 **Moon near Pollux** (morning sky) at 6h UT.

13 **Moon near Beehive Cluster** (morning sky) at 10h UT.

14 **Moon near Jupiter** (90° from Sun, morning sky) at 15h UT. Mag. –2.1.

14 **Last Quarter Moon** at 15:17 UT.

15 **Moon at apogee** (farthest from Earth) at 2h UT (distance 404,336 km; angular size 29.6').

15 **Moon near Regulus** (morning sky) at 8h UT.

17 **Leonid meteor shower peaks** at 16h and 22h UT. Arises from debris ejected by Comet Tempel-Tuttle in 1533. Produces very fast meteors (71 km/sec). Expect 10 to 15 meteors per hour under dark skies. Best viewed after midnight.

18 **Saturn at conjunction** with the Sun at 9h UT. The ringed planet passes into the morning sky.

19 **Moon near Spica** (33° from Sun, morning sky) at 19h UT.

22 **New Moon** at 12:31 UT. Start of lunation 1137.

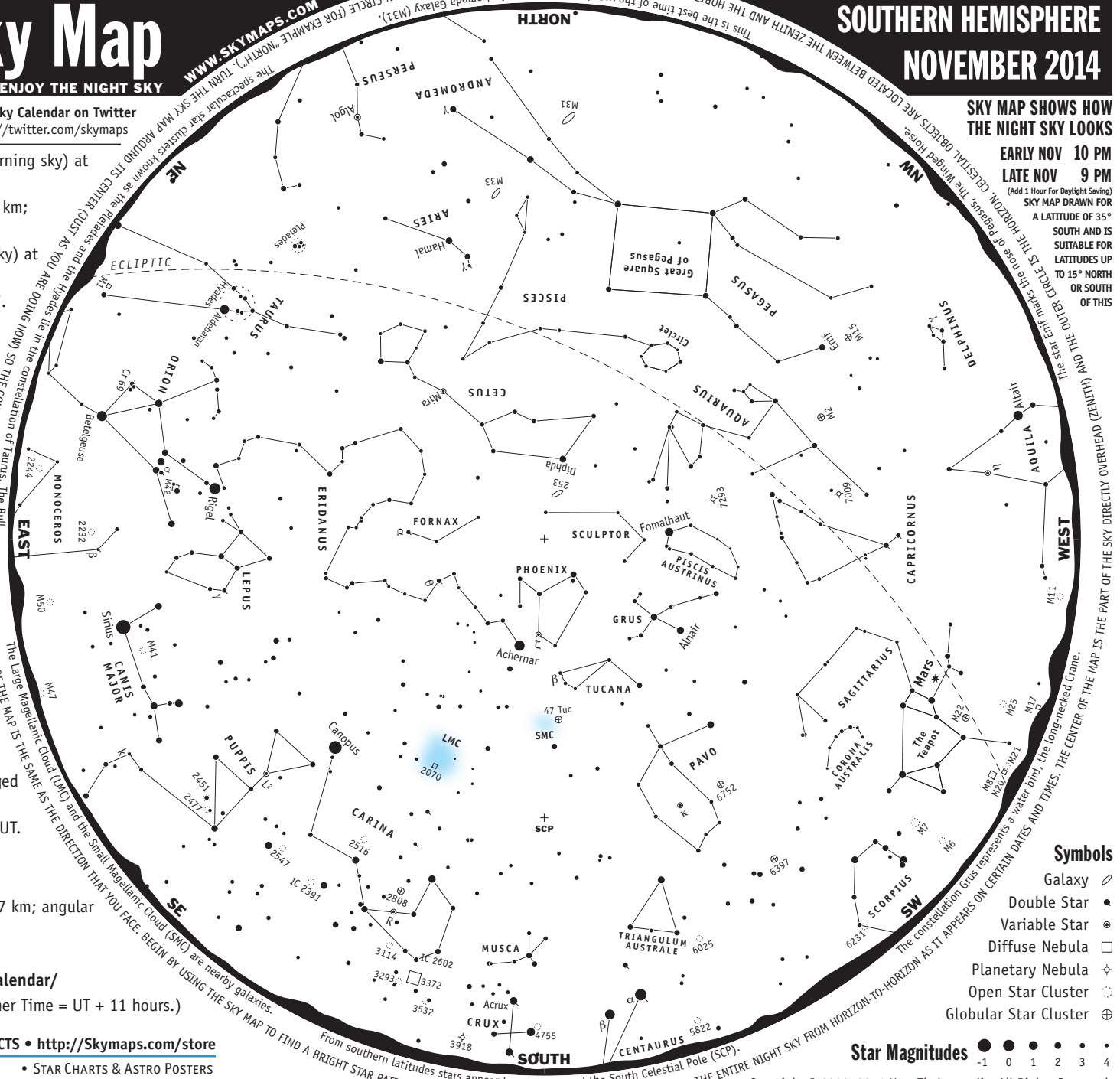
26 **Moon near Mars** (evening sky) at 8h UT. Mag. +1.0.

27 **Moon at perigee** (closest to Earth) at 23h UT (369,827 km; angular size 32.3').

29 **First Quarter Moon** at 10:06 UT.

More sky events and links at http://Skymaps.com/skycalendar/

All times in Universal Time (UT). (Australian Eastern Summer Time = UT + 11 hours.)



SKY MAP SHOWS HOW THE NIGHT SKY LOOKS

EARLY NOV 10 PM
LATE NOV 9 PM
(Add 1 Hour For Daylight Saving)

SKY MAP DRAWN FOR A LATITUDE OF 35° SOUTH AND IS SUITABLE FOR LATITUDES UP TO 15° NORTH OR SOUTH OF THIS

Symbols

Galaxy
Double Star
Variable Star
Diffuse Nebula
Planetary Nebula
Open Star Cluster
Globular Star Cluster

Star Magnitudes -1 0 1 2 3 4

INSTRUCTIONS: THE SKY MAP SHOWS THE ENTIRE NIGHT SKY FROM HORIZON-TO-HORIZON AS IT APPEARS ON CERTAIN DATES AND TIMES.

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All sales support the production and free distribution of The Evening Sky Map.

About the Celestial Objects

Listed on this page are several of the brighter, more interesting celestial objects visible in the evening sky this month (refer to the monthly sky map). The objects are grouped into three categories. Those that can be easily seen with the naked eye (that is, without optical aid), those easily seen with binoculars, and those requiring a telescope to be appreciated. **Note, all of the objects (except single stars) will appear more impressive when viewed through a telescope or very large binoculars.** They are grouped in this way to highlight objects that can be seen using the optical equipment that may be available to the star gazer.

Tips for Observing the Night Sky

When observing the night sky, and in particular deep-sky objects such as star clusters, nebulae, and galaxies, it's always best to observe from a dark location. Avoid direct light from street lights and other sources. If possible observe from a dark location away from the light pollution that surrounds many of today's large cities.

You will see more stars after your eyes adapt to the darkness—usually about 10 to 20 minutes after you go outside. Also, if you need to use a torch to view the sky map, cover the light bulb with red cellophane. This will preserve your dark vision.

Finally, even though the Moon is one of the most stunning objects to view through a telescope, its light is so bright that it brightens the sky and makes many of the fainter objects very difficult to see. So try to observe the evening sky on moonless nights around either New Moon or Last Quarter.

Astronomical Glossary

Conjunction – An alignment of two celestial bodies such that they present the least angular separation as viewed from Earth.

Constellation – A defined area of the sky containing a star pattern.

Diffuse Nebula – A cloud of gas illuminated by nearby stars.

Double Star – Two stars that appear close to each other in the sky; either linked by gravity so that they orbit each other (binary star) or lying at different distances from Earth (optical double). Apparent separation of stars is given in seconds of arc (").

Ecliptic – The path of the Sun's center on the celestial sphere as seen from Earth.

Elongation – The angular separation of two celestial bodies. For Mercury and Venus the greatest elongation occurs when they are at their most angular distance from the Sun as viewed from Earth.

Galaxy – A mass of up to several billion stars held together by gravity.

Globular Star Cluster – A ball-shaped group of several thousand old stars.

Light Year (ly) – The distance a beam of light travels at 300,000 km/sec in one year.

Magnitude – The brightness of a celestial object as it appears in the sky.

Open Star Cluster – A group of tens or hundreds of relatively young stars.

Opposition – When a celestial body is opposite the Sun in the sky.

Planetary Nebula – The remnants of a shell of gas blown off by a star.

Universal Time (UT) – A time system used by astronomers. Also known as Greenwich Mean Time. Australian Eastern Standard Time (Sydney, Australia) is UT plus 10 hours.

Variable Star – A star that changes brightness over a period of time.

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CELESTIAL OBJECTS

Skymaps.com

Easily Seen with the Naked Eye

Altair	Aql	•	Brightest star in Aquila. Name means "the flying eagle". Dist=16.7 ly.
Sirius	CMa	•	The brightest star in the sky. Also known as the "Dog Star". Dist=8.6 ly.
Canopus	Car	•	Second brightest star in the sky. 14,000 times more luminous than the Sun. Dist=309 ly.
β Centauri	Cen	•	With Alpha Centauri, forms the so-called "Pointers-to-the-Cross". Dist=525 ly.
α Centauri	Cen	◍	Nearest bright star to Sun at 4.4 ly. Brilliant double star in a telescope. 80 year period.
Achernar	Eri	•	Brightest star in Eridanus, The River. Arabic name meaning "end of river". Dist=140 ly.
Rigel	Ori	•	The brightest star in Orion. Blue supergiant star with mag 7 companion. Dist=770 ly.
Betelgeuse	Ori	•	One of the largest red supergiant stars known. Diameter=300 times that of Sun. Dist=430 ly.
Algol	Per	◉	Famous eclipsing binary star. Magnitude varies between 2.1 & 3.4 over 2.867 days.
Fomalhaut	PsA	•	Brightest star in Piscis Austrinus. In Arabic the "fish's mouth". Dist=25 ly.
Pleiades	Tau	⁘	The Seven Sisters. Spectacular cluster. Many more stars visible in binoculars. Dist=399 ly.
Hyades	Tau	⁘	Large V-shaped star cluster. Binoculars reveal many more stars. Dist=152 ly.
Aldebaran	Tau	•	Brightest star in Taurus. It is not associated with the Hyades star cluster. Dist=66.7 ly.

Easily Seen with Binoculars

M31	And	⬭	The Andromeda Galaxy. Most distant object visible to naked eye. Dist=2.5 million ly.
M2	Aqr	⊕	Resembles a fuzzy star in binoculars.
η Aquilae	Aql	◉	Bright Cepheid variable. Mag varies between 3.6 & 4.5 over 7.166 days. Dist=1,200 ly.
6397	Ara	⊕	Thought to be the nearest globular. Dist=7,000 ly.
M41	CMa	⁘	First recorded observation by Aristotle in 325 BC as "cloudy spot". Dist=2,300 ly.
2516	Car	⁘	Spectacular open star cluster of 100 stars spaning 1/2 deg. Dist=1,300 ly.
2808	Car	⊕	Located 4 deg W of Nu Carinae. Visible to the naked eye on clear nights.
R Carinae	Car	◉	Long period variable. Magnitude varies between 3.9 & 10.5 over 309 days.
Mira	Cet	◉	Famous long period variable star. Mag varies between 3.0 & 10.1 over 332 days.
LMC	Dor	⬭	Large Magellanic Cloud. A neighbouring galaxy of the Milky Way. Dist=180,000 ly.
γ Leporis	Lep	◍	Visible with binoculars. Gold & white stars. Mags 3.6 & 6.2. Dist=30 ly. Sep=96.3".
2232	Mon	⁘	A large scattered star cluster of 20 stars. Dist=1,300 ly.
Cr 69	Ori	⁘	Lambda Orionis Cluster. Dist=1,630 ly.
M42	Ori	□	The Great Orion Nebula. Spectacular bright nebula. Best in telescope. Dist=1,300 light years.
κ Pavonis	Pav	◉	Cepheid-type. Magnitude varies between 3.9 & 4.8 over 9.088 days.
6752	Pav	⊕	One of the better globular star clusters in the sky. Dist=14,000 ly.
M15	Peg	⊕	Only globular known to contain a planetary nebula (Mag 14, d=1"). Dist=30,000 ly.
ζ Phoenicis	Phe	◍	Eclipsing binary star and double (mag 8). Varies between 3.9 & 4.4 over 1.667 days.
L^2	Pup	◉	Semi-regular variable. Magnitude varies between 2.6 & 6.2 over 140.42 days.
2451	Pup	⁘	30+ stars in binoculars. The brightest star, χ Puppis, is red. Dist=850 ly.
2477	Pup	⁘	Very rich but distant star cluster (4,200 ly). Resembles globular through binoculars.
M25	Sgr	⁘	Bright cluster located about 6 deg N of "teapot's" lid. Dist=1,900 ly.
253	Scl	⬭	Fine, large, cigar-shaped galaxy. Requires dark sky. Member of Sculptor Group.
6025	TrA	⁘	A small open star cluster in Milky Way. Dist=2,700 ly.
47 Tucanae	Tuc	⊕	Spectacular object. Telescope will reveal stars. Near edge of SMC. Dist=15,000 ly.
β Tucanae	Tuc	◍	Complex multiple star. Binoculars show one pair. Telescope required to split primary star.
SMC	Tuc	⬭	Small Magellanic Cloud. Companion galaxy to Milky Way. Requires dark sky. Dist=210,000 ly.
2547	Vel	⁘	Fine open cluster visible through binoculars. Dist=1,300 ly.
IC 2391	Vel	⁘	Omicron Velorum Cluster. Superb object for binoculars. Dist=450 ly.

Telescopic Objects

γ Andromedae	And	◍	Attractive double star. Bright orange star with mag 5 blue companion. Sep=9.8".
7009	Aqr	✧	Saturn Nebula. Requires 8-inch telescope to see Saturn-like appendages.
7293	Aqr	✧	Helix Nebula. Spans nearly 1/4 deg. Requires dark sky. Dist=300 ly.
γ Arietis	Ari	◍	Impressive looking double blue-white star. Visible in a small telescope. Sep=7.8".
3918	Cen	✧	The Blue Planetary. Visible in a small telescope as a round blue disk.
γ Delphini	Del	◍	Appear yellow & white. Mags 4.3 & 5.2. Dist=100 ly. Struve 2725 double in same field.
2070	Dor	□	Tarantula Nebula. A bright nebula located in LMC. A star-forming region.
θ Eridani	Eri	◍	Striking blue-white double star. Mags 3.2 & 4.3. Visible in a small telescope. Sep=8.2".
β Monocerotis	Mon	◍	Triple star. Mags 4.6, 5.0 & 5.4. Requires telescope to view arc-shape. Sep=7.3".
σ Orionis	Ori	◍	Superb multiple star. 2 mag 7 stars one side, mag 9 star on other. Struve 761 triple in field.
M33	Tri	⬭	Fine face-on spiral galaxy. Requires a large aperture telescope. Dist=2.3 million ly.

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